

# International Materials Institutes (IMI)

Enhancing International Collaborations in Materials Research

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## *Program Solicitation*

*NSF-02-096*

DIRECTORATE FOR MATHEMATICAL AND PHYSICAL SCIENCES  
DIRECTORATE FOR SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES  
OFFICE OF INTERNATIONAL SCIENCE AND ENGINEERING

**FULL PROPOSAL DEADLINE(S): June 6, 2002**



NATIONAL SCIENCE FOUNDATION



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# SUMMARY OF PROGRAM REQUIREMENTS

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## GENERAL INFORMATION

**Program Title:** International Materials Institutes (IMI)

**Synopsis of Program:** The aim of this program is to establish International Materials Institutes that will enhance international collaboration between U.S. researchers and educators and their counterparts in specific regions of the world such as Africa, the Americas, Asia, Europe, or the Pacific region. These institutes will advance fundamental materials research by coordinating international projects involving condensed matter and materials physics; solid state and materials chemistry; and the design, synthesis, characterization, and processing of materials to meet global and regional needs. The institutes must be university-based and provide a research environment that will attract leading scientists and engineers. This may be accomplished, for example, by supporting research in selected thematic areas by networking with other universities, centers, and national facilities. An important aspect of the IMI's activities will be to integrate materials research with education.

Representative activities may include, for example: identifying areas of important and innovative research for joint collaborative programs; organizing and coordinating international exchange programs; establishing mechanisms for long-term international collaborations among academia, industrial and government agencies and laboratories; organizing international workshops on materials research and education, and coordinating international research experiences for students and postdoctoral scholars; developing internet-based virtual institutes with video capabilities for international conferencing and learning; providing university-based research opportunities that attract leading materials researchers as IMI participants; developing and supporting a materials research network that will provide access to research and education resources, such as searchable databases containing materials properties, publications, facilities, instruments, and experts; participating in the creation of a global International Materials Research Network; enhancing public awareness of economic and societal contributions by materials scientists and engineers; partnering with states, private foundations, industry, national laboratories, international organizations, other universities, centers, and national facilities to accomplish the stated goals of the IMI; developing a new generation of scientists and engineers with enhanced international leadership capabilities.

### **Cognizant Program Officer(s):**

- David L. Nelson, Materials Research, Coordinator, Base Science Cluster and Program Director, Solid State Chemistry, Mathematical and Physical Sciences, Division of Materials Research, 1065.07, telephone: 703-292-4932, e-mail: [dnelson@nsf.gov](mailto:dnelson@nsf.gov).
- Laura P. Bautz, International Programs, Deputy Director, Office of International Science and Engineering/Social, Behavioral and Economic Sciences Directorate, 935N, telephone: 703-292-8710, e-mail: [lbautz@nsf.gov](mailto:lbautz@nsf.gov).
- Ulrich Strom, Materials Research, Program Director, Mathematical and Physical Sciences, Division of Materials Research, 1065.37, telephone: 703-292-4938, e-mail: [ustrom@nsf.gov](mailto:ustrom@nsf.gov).

## **Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):**

- 47.049 --- Mathematical and Physical Sciences
- 47.075 --- Social, Behavioral and Economic Sciences

## **ELIGIBILITY INFORMATION**

- **Organization Limit:** Only U.S. academic institutions are eligible.
- **PI Eligibility Limit:** None
- **Limit on Number of Proposals:** None

## **AWARD INFORMATION**

- **Anticipated Type of Award:** Cooperative Agreement
- **Estimated Number of Awards:** Up to three awards
- **Anticipated Funding Amount:** \$500,000 to \$1,000,000 per year per award. NSF anticipates funding \$2,000,000 in FY 2002, pending availability of funds.

## **PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS**

### ***A. Proposal Preparation Instructions***

- **Full Proposals:** Supplemental Preparation Guidelines
  - The program announcement/solicitation contains supplements to the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

### ***B. Budgetary Information***

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

### ***C. Deadline/Target Dates***

- **Letters of Intent (*optional*):** None
- **Preliminary Proposals (*optional*):** None
- **Full Proposal Deadline Date(s):** June 6, 2002

#### ***D. FastLane Requirements***

- **FastLane Submission:** Required
- **FastLane Contact(s):**
  - Maxine E. Jefferson, FastLane, Computer Specialist, Mathematical and Physical Sciences, Division of Materials Research, 1065, telephone: 703-292-4918, e-mail: [dmrfl@nsf.gov](mailto:dmrfl@nsf.gov).

#### **PROPOSAL REVIEW INFORMATION**

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full program announcement/solicitation for further information.

#### **AWARD ADMINISTRATION INFORMATION**

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

## **I. INTRODUCTION**

The basic properties of materials frequently define the capabilities, potential, reliability, and limitations of technology. Improved materials and processes will play an ever-increasing role in efforts to improve energy efficiency, promote environmental protection, reduce health-care costs, develop an information infrastructure, provide modern and reliable transportation and civil infrastructure systems, and address security. Advances in materials research enable progress across a broad range of scientific disciplines and technological areas with dramatic impacts on society.

Continued progress in materials science and the engineering of materials is increasingly dependent upon collaborative efforts among chemists, physicists, biologists, mathematicians and engineers, as well as closer coordination among funding agencies and effective partnerships involving universities, industry, national laboratories, and international organizations. Because of the rapidly growing interdependence of regional priorities, partnerships are not only important at the national and international levels, but also from a global perspective.

With this in mind, the National Science Foundation (NSF) has co-sponsored a series of five international workshops in materials research designed to stimulate enhanced collaborations among materials researchers and create networks linking the participating countries. A recent NSF report (NSF 02-068) entitled "TOWARD AN INTERNATIONAL MATERIALS RESEARCH NETWORK" provides background information and reports for each of five international workshops co-sponsored by NSF: U.S., Canada, Mexico; National Science Foundation - European Commission; U.S. - Pan American Countries; U.S. - Asian Pacific Countries; and U.S. - African Countries. The individual workshop reports are available on the web page of the International Union of Materials Research Societies at <http://www.iumrs.org>.

In FY 2002 the National Science Foundation will support the establishment of up to three International Materials Institutes to advance materials research by coordinating international projects involving condensed matter and materials physics; solid state and materials chemistry; and the design, synthesis, characterization, and processing of materials to meet global and regional needs. The institutes must be university-based and provide a research environment that will attract leading scientists and engineers. This may be accomplished, for example, by supporting research in selected thematic areas by networking with other universities, centers, and national facilities.

## **II. PROGRAM DESCRIPTION**

The aim of this program is to establish International Materials Institutes that enhance international collaboration between U.S. researchers and educators and their counterparts in specific areas of the world such as major subregions of Africa, the Americas, Asia, Europe, or the Pacific region. The objective is to advance materials research by coordinating international projects involving condensed matter and materials physics; solid state and materials chemistry; and the design, synthesis, characterization, and processing of materials to meet global and regional needs. The institutes must be university-based (single or multi-campus), and provide a research environment that will attract leading scientists and engineers. This may be accomplished, for example, by supporting research in selected thematic areas by networking with other universities, centers, and national facilities. An important aspect of the IMI's activities will be to integrate materials research with education.

The scope of activities of an IMI may include some or all of the following:

- Identifying areas of important and innovative research for joint international collaborative programs;
- Organizing and coordinating international exchange programs at all professional levels;
- Establishing mechanisms for long-term international collaborations among academia, industrial and government agencies and laboratories;
- Organizing international workshops and coordinating international research experiences for students and post-doctoral scholars in the materials field;
- Developing internet-based virtual institutes with video capabilities for international conferencing and learning;
- Providing a research environment that will attract leading scientists and engineers in the materials field. This may be accomplished, for example, by supporting excellent research in selected thematic areas and by networking with other universities, centers, and national facilities.
- Developing and supporting a materials world net that will provide access to research and education resources such as searchable databases containing materials properties, publications, facilities, instruments, and information about educational activities and research expertise;
- Enhancing materials education at the international level and increasing the public's awareness of the contributions materials research can make to address societal needs;
- Participating in the creation of a global International Materials Network designed to coordinate the rapidly growing interdependence of regional materials research priorities and related activities carried out in all regions of the world;
- Partnering with states, private foundations, industry, national laboratories, international organizations, other universities, centers, and national facilities to accomplish the stated goals of the IMI;
- Developing a new generation of students, postdoctoral scholars, and materials researchers, educators and practitioners with enhanced international leadership capabilities.

Each IMI has the responsibility to manage and evaluate its own operation with respect to program administration, planning, content and direction. NSF support is intended to promote optimal use of university resources and capabilities, and to provide maximum flexibility in setting research directions, developing cooperative activities with other institutions, nations, global regions and international communities, and in aiding the international materials research community in responding quickly and effectively to new opportunities to advance materials research and education.

### **III. ELIGIBILITY INFORMATION**

Only U.S. academic institutions are eligible.

## **IV. AWARD INFORMATION**

NSF anticipates funding \$2,000,000 in FY 2002, pending availability of funds. Individual IMI awards are expected to range in size from \$500,000 to \$1,000,000 per year per award. Awards will be made for an initial commitment of up to five years. Funding for the fourth and fifth years will be contingent upon the outcome of a comprehensive review. The number of awards will depend on the availability of funds and the quality of proposals received. The anticipated date of awards is October 1, 2002. NSF plans to expand the IMI program by means of subsequent competitions that will result in additional awards.

## **V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS**

### **A. Proposal Preparation Instructions**

#### **Full Proposal:**

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Web Site at: <http://www.nsf.gov/cgi-bin/getpub?gpg>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

Proposals must be submitted via NSF FastLane. Proposals that exceed the page limitations will be ineligible for consideration and will be returned without review. The proposal must be single spaced in 12-point type and should contain the following items:

1. NSF Cover Sheet
2. Information about the Principal Investigator/Project Director (NSF Form 1225), automatically generated by FastLane.
3. Project Summary

Provide a clear rationale for and description of the proposed IMI and its potential impact. Briefly describe the vision for the Institute, its institutional setting, its proposed international scope and organization, activities in materials research and education and their integration, plans for the development of human resources, and management plan.

Limit: 2 pages.

4. Table of Contents

Generated automatically by FastLane.

5. Project Description

Include the following:

- a. List of Participants

List each senior investigator (faculty level or equivalent), by full name, and his/her institutional and departmental affiliation; also enter each name in "Add/Delete Non Co-PI Senior Personnel" FastLane Form.

b. Achievements under Prior NSF Support

Describe achievements under prior NSF support that pertain to the present proposal.  
Limit: 2 pages.

c. Education and Training

Describe mechanisms to enhance materials education at the international level and increase the public's awareness of the contributions materials research makes to address societal needs.

d. Exchange Programs

Describe the proposed activities of the institute in human resource development, including plans for international exchange programs involving undergraduate and graduate students, postdoctoral scholars, faculty, and scientists from industrial and government laboratories, and nonprofit organizations.

e. International Collaborations

Describe how the institute will identify areas of important and innovative research for joint collaborative programs and establish mechanisms for substantive, long-term collaborations involving academic, industrial and government laboratories. List names and institutions of foreign collaborators.

f. Research Opportunities

Describe how the IMI will attract leading materials researchers as participants. Describe the research themes to be addressed and the research proposed by the IMI, and describe proposed mechanisms for networking with other universities, centers, and national facilities.

g. Partnerships

Describe how the IMI plans to develop partnerships with states, private foundations, industries, national laboratories, and international organizations in order to fully advance the stated goals of the IMI.

h. Internet Resources

Describe how the institute plans to provide capabilities for international conferencing and learning and develop and support a materials world net that will provide access to research and education resources, such as searchable databases containing materials properties, publications, and information about educational activities and professional expertise. Software architectures should address both security and openness issues. If applicable, describe how the IMI would provide access for remote use of instruments and facilities through the internet.

i. International Workshops

Describe the role of the institute in facilitating the advancement of materials research through national and international scientific organizations, international meetings, symposia and workshops , and describe the role of the institute in coordinating international research experiences for students and postdoctoral scholars in materials research.

j. International Materials Research Network

Describe how the IMI plans to work with organizations in other countries and world regions to create a global International Materials Research Network that would coordinate the efforts of regional networks and counterpart institutes or organizations.

k. Management

Describe the plans for administration of the IMI, including the functions of key personnel and the role of any proposed advisory committee, executive committee, and/or program committee or their equivalent. Describe the procedures and criteria used to select, administer and evaluate the programs of the IMI.

6. References Cited (see GPG for details)

References are not included in the proposal length limitation.

7. Biographical Sketches

Include a biographical sketch for each senior participant according to GPG guidelines.

8. Budget pages and budget justification

Complete budget pages for each year of support. The summary budget will be automatically generated. Provide a budget justification up to three pages in length.

9. Current and Pending Support (NSF Form 1239)

List current and pending support for each senior investigator.

10. Letters of Support

Include only official letters of support verifying specific commitments of resources from participating institutions. Scan signed letters into the Supplementary Documents section of FastLane, do not send originals.

Limit: 6 pages

Proposers are reminded to identify the program solicitation number (NSF-02-096) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

**B. Budgetary Information**

Cost sharing is not required in proposals submitted under this Program Solicitation.

### **C. Deadline/Target Dates**

Proposals must be submitted by the following date(s):

**Full Proposals by 5:00 PM local time:** June 6, 2002

### **D. FastLane Requirements**

Proposers are required to prepare and submit all proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](mailto:fastlane@nsf.gov). The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this Program Solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

*Submission of Electronically Signed Cover Sheets.* The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see [Chapter II, Section C](#) of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane website at: <http://www.fastlane.nsf.gov>.

## **VI. PROPOSAL REVIEW INFORMATION**

### **A. NSF Proposal Review Process**

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The two merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgements.

#### **What is the intellectual merit of the proposed activity?**

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

### **What are the broader impacts of the proposed activity?**

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

#### ***Integration of Research and Education***

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

#### ***Integrating Diversity into NSF Programs, Projects, and Activities***

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

#### **Additional Review Criteria**

In addition to the standard NSF review criteria, reviewers will be asked to use the following criteria:

- Institutional setting and rationale for the Institute. Relationship to existing and planned institutional programs; capabilities in materials research and education; intellectual breadth of the research opportunities; potential for stimulating interdisciplinary international collaborations.
- Achievements under relevant prior NSF support, where applicable.
- Plans and potential for developing partnerships with states, private foundations, industry, national laboratories, international organizations, other universities, centers, and national facilities.
- The merit of the proposed international collaborations and the expected mutual benefit to be derived from the contribution of the scientists and engineers in each country. Potential global impact of the IMI on advancing national and international collaborations that integrate materials research with education and foster interactive approaches to materials research and technology, develop effective educational programs, and increase joint activities in materials research and education in specific areas of the world.
- Institutional and other support, management plan, and budget. Institutional and other commitments to the IMI. Likely effectiveness of the proposed management plan, including allocation of resources, plans and potential for implementing flexible and innovative programs, and plans for evaluating the programs of the Institute. Appropriateness of the requested budget.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the identities of reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

## **B. Review Protocol and Associated Customer Service Standard**

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Mail Review followed by Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation or the date of proposal receipt (whichever is later). The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at one's own risk.

## **VII. AWARD ADMINISTRATION INFORMATION**

### **A. Notification of the Award**

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

### **B. Award Conditions**

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)\* or Federal Demonstration Partnership (FDP) Terms and Conditions;\* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1).

Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

\*These documents may be accessed electronically on NSF's Web site at [http://www.nsf.gov/home/grants/grants\\_gac.htm](http://www.nsf.gov/home/grants/grants_gac.htm). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Web site at <http://www.nsf.gov/cgi-bin/getpub?gpm>. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Web site at <http://www.gpo.gov>.

### **C. Reporting Requirements**

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

## **VIII. CONTACTS FOR ADDITIONAL INFORMATION**

General inquiries regarding International Materials Institutes should be made to:

- David L. Nelson, Materials Research, Coordinator, Base Science Cluster and Program Director, Solid State Chemistry, Mathematical and Physical Sciences, Division of Materials Research, 1065.07, telephone: 703-292-4932, e-mail: [dnelson@nsf.gov](mailto:dnelson@nsf.gov).
- Laura P. Bautz, International Programs, Deputy Director, Office of International Science and Engineering/Social, Behavioral and Economic Sciences Directorate, 935N, telephone: 703-292-8710, e-mail: [lbautz@nsf.gov](mailto:lbautz@nsf.gov).
- Ulrich Strom, Materials Research, Program Director, Mathematical and Physical Sciences, Division of Materials Research, 1065.37, telephone: 703-292-4938, e-mail: [ustrom@nsf.gov](mailto:ustrom@nsf.gov).

For questions related to the use of FastLane, contact:

- Maxine E. Jefferson, FastLane, Computer Specialist, Mathematical and Physical Sciences, Division of Materials Research, 1065, telephone: 703-292-4918, e-mail: [dmrfl@nsf.gov](mailto:dmrfl@nsf.gov).

## **IX. OTHER PROGRAMS OF INTEREST**

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at <http://www.nsf.gov/cgi-bin/getpub?gp>. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF [E-Bulletin](#), which is updated daily on the NSF web site at <http://www.nsf.gov/home/ebulletin>, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's [Custom News Service](http://www.nsf.gov/home/cns/start.htm) (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

## **ABOUT THE NATIONAL SCIENCE FOUNDATION**

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement/solicitation for further information.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090, FIRS at 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at [plainlanguage@nsf.gov](mailto:plainlanguage@nsf.gov).

## PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.

*OMB control number:* 3145-0058.